



Hume Township

Electrical System Health Check

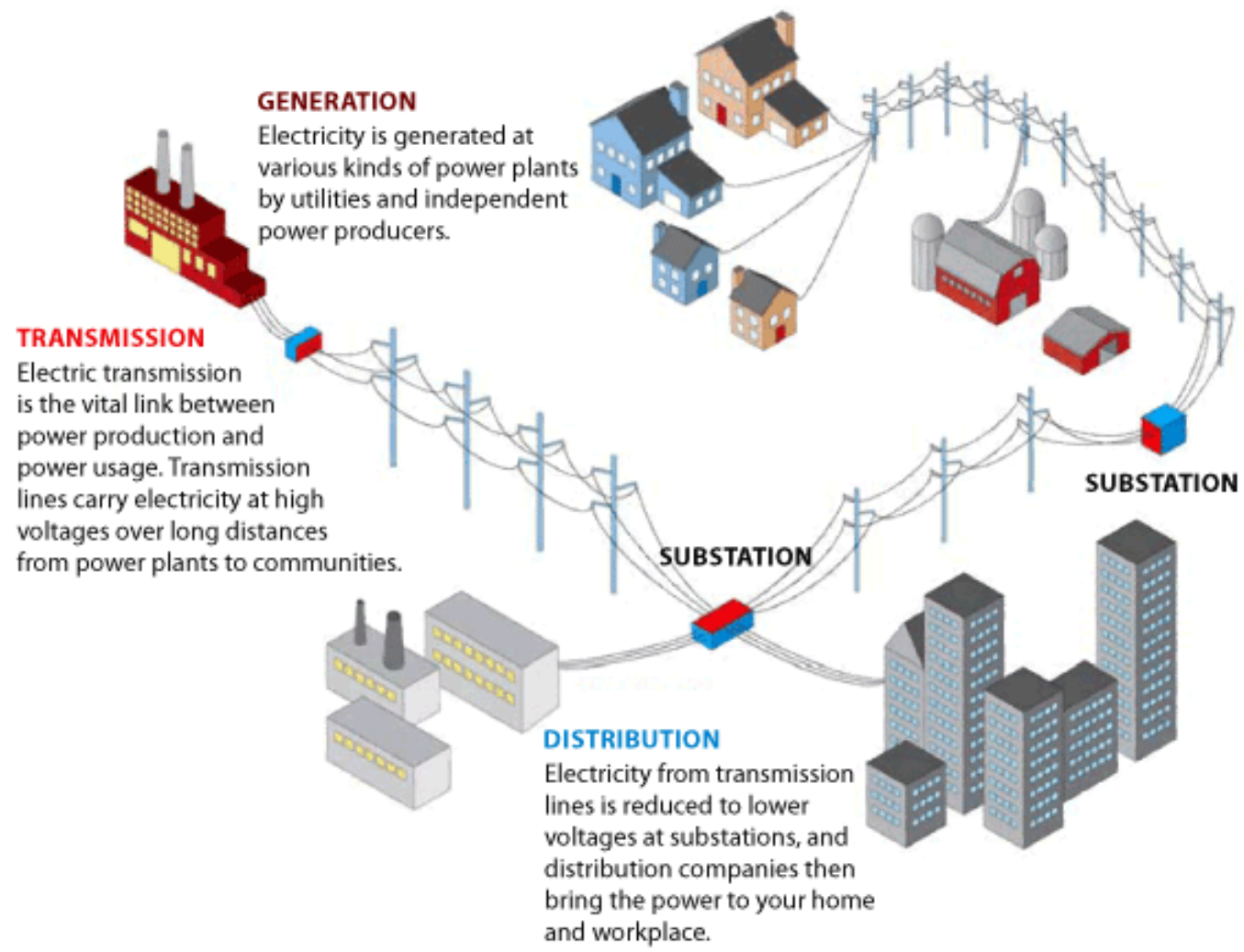
October 18, 2019

Agenda

- **Electric System & Tree Trim Overview**

- Map of Hume Twp. – DTE Substations and area of concern
- Detail of area of concern
- DTE work in Hume Twp.
- DTE Resources

Electrical System Operation



Power Quality Overview and Criteria

Momentary Outage

- Loss of power for less than 5 minutes
- Protective devices operate to avoid sustained outages

Sustained Outages

- Loss of power for more than 5 minutes
- Poor-Performance = 5 or more in one year

Voltage Limits

- Normal at meter = 114 volts to 126 volts
- Variations will occasionally occur
- Customers should protect sensitive equipment

DTE's approach to providing affordable and reliable electric service is based on four key initiatives

Tree Trimming



- Enhance the tree trimming plan—with a particular focus on specifications and quality of work—to improve reliability and lower trouble costs
-

Infrastructure Resilience



- Install sectionalizing devices to reduce outage size and restoration time
 - Replace aging infrastructure to reduce major failure events
-

Preventative Maintenance



- Perform and execute annual preventative maintenance plan
 - Replace aging infrastructure to reduce major failure events
-

Technology & Automation



- Invest in remote monitoring and control devices, an Advanced Distribution Management System (ADMS), and System Operations Center modernization

Overgrown trees near electric lines can lead to customer outages and wire down safety concerns

Reliability

- Trees are one of the leading causes of electric service outages
- Trees cause:
 - 2/3 of outage minutes
 - 1/2 of customer outages
 - 1/3 of outage events
- Tree contact with wires can also cause momentary outages for customers

Safety

- Falling trees and branches can cause wire downs, posing risks to public safety
- DTE prioritizes addressing safety concerns from all wire downs



Tree trimming provides necessary clearance around poles and wires to mitigate tree related reliability and safety concerns

Before Trimming



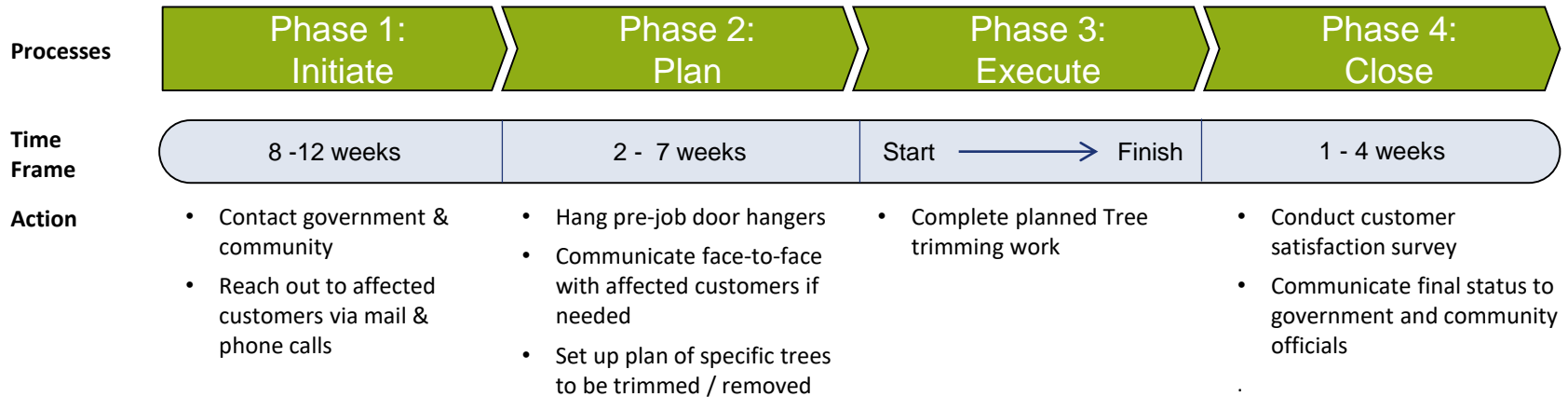
After Trimming



DTE has a robust circuit selection process for Tree Trimming

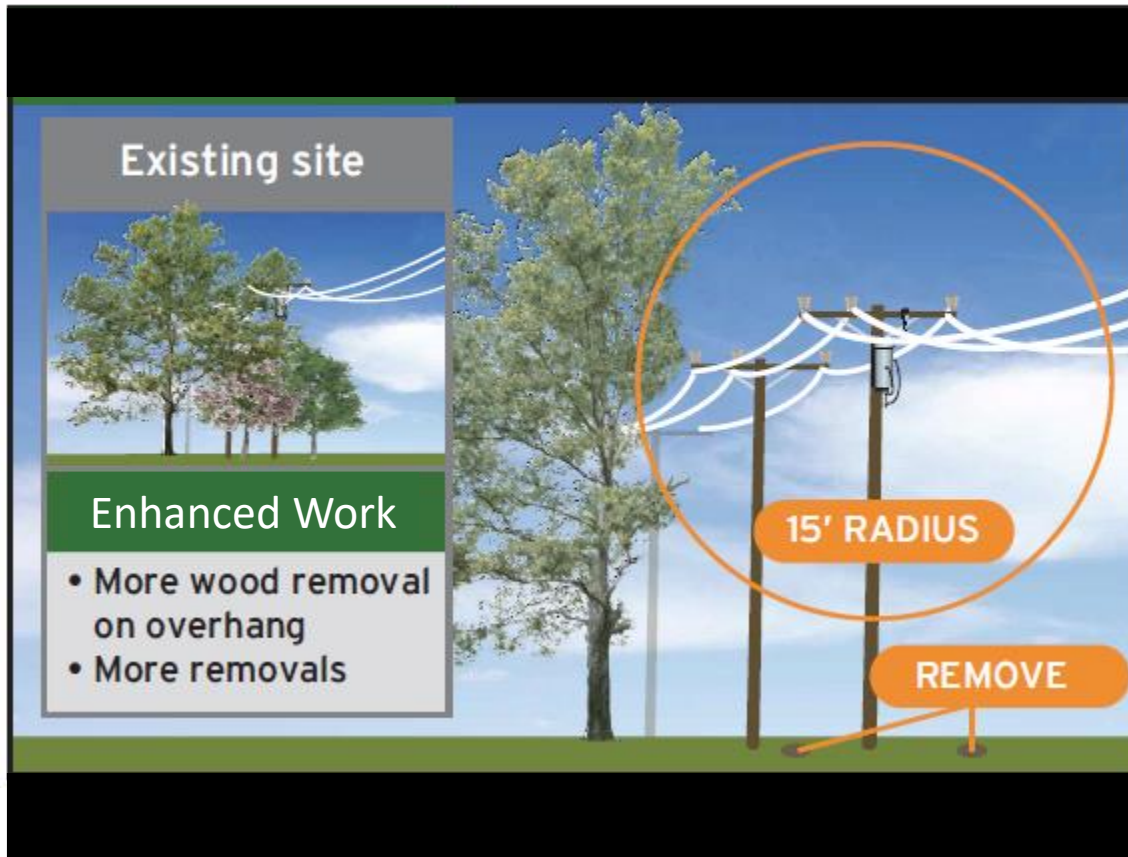
- 1 Evaluate the unique characteristics of each circuit:
 - Reliability Performance
 - Wire down History
 - Date of Last Trim
- 2 Perform a circuit optimization analysis to select the circuits that have the greatest reliability and safety benefit to our customers
- 3 Use estimated trim cost information to develop a five-year tree trim plan for every DTE substation

In order to execute our tree trim program we use a four phased approach that focusses on community and customer outreach



DTE trims trees to ensure a minimum five-year clearance; removals are typically preferred if we can obtain permissions from the landowner

Tree Clearances



- A five-year cycle requires that trees are trimmed to approximately 10 feet from the outer most conductor (15 foot radius)
- DTE only removes trees with customer permission, otherwise the tree will be trimmed
- Dead and diseased trees are typically targeted for removals
- Wood debris is cut into firewood length pieces and stacked on property

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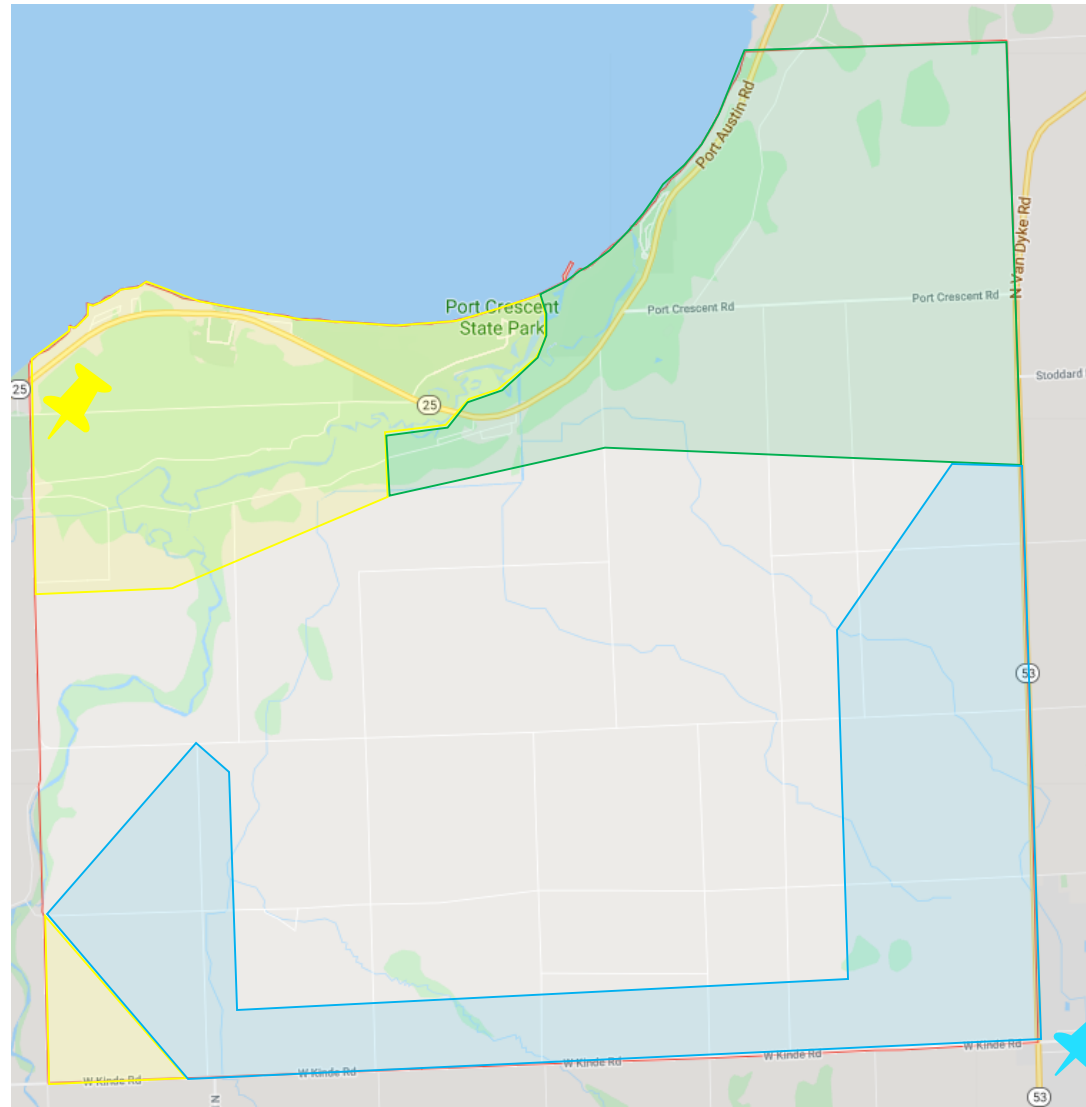
- Electric System Overview

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DTE Substations Feeding Hume Township

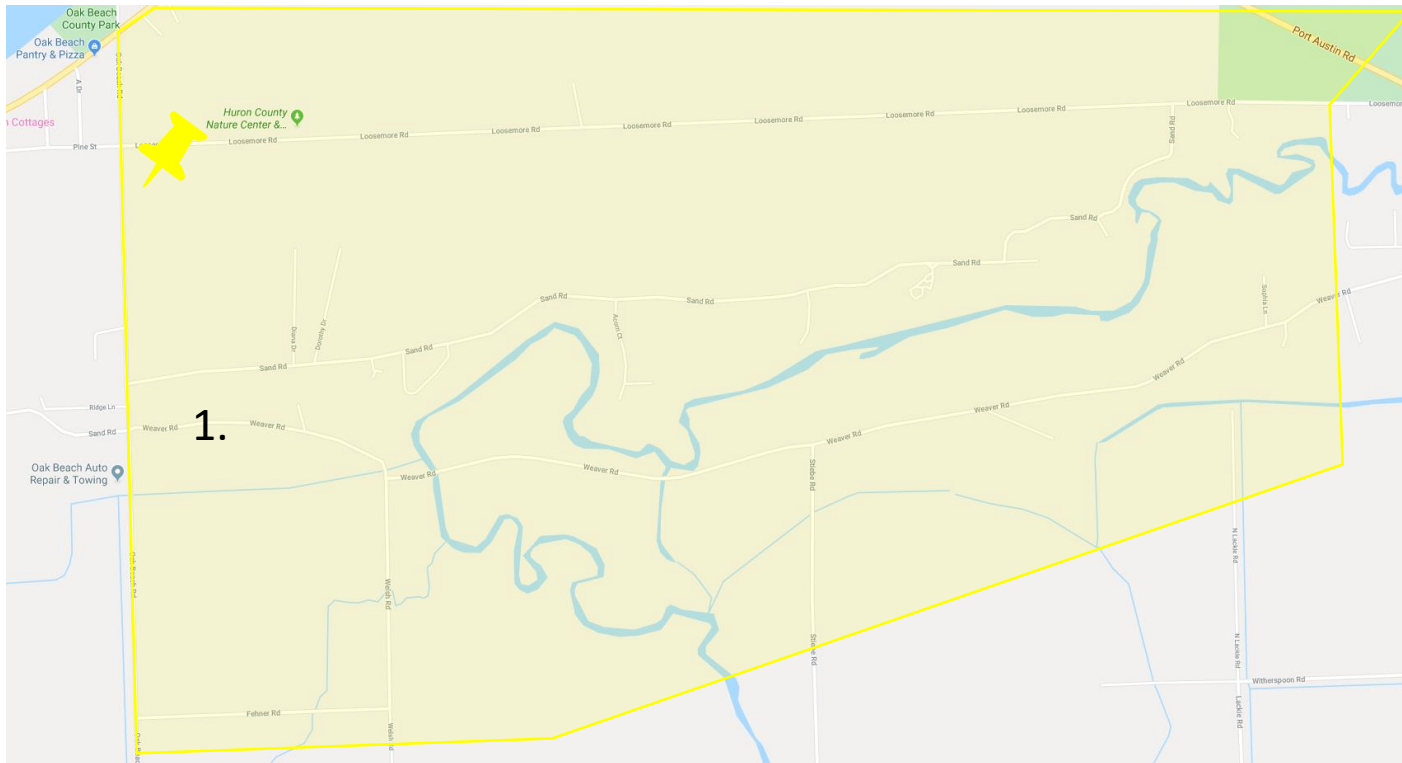
-  Oak Beach
-  Port Austin
-  Cross



Overview: Hume Township - 2019 Areas of Concern

1. Weaver Road

- *Distribution Circuit OAKBH0302*



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Area 1: OAKBH0302

Weaver Road, East of Oak Beach Road

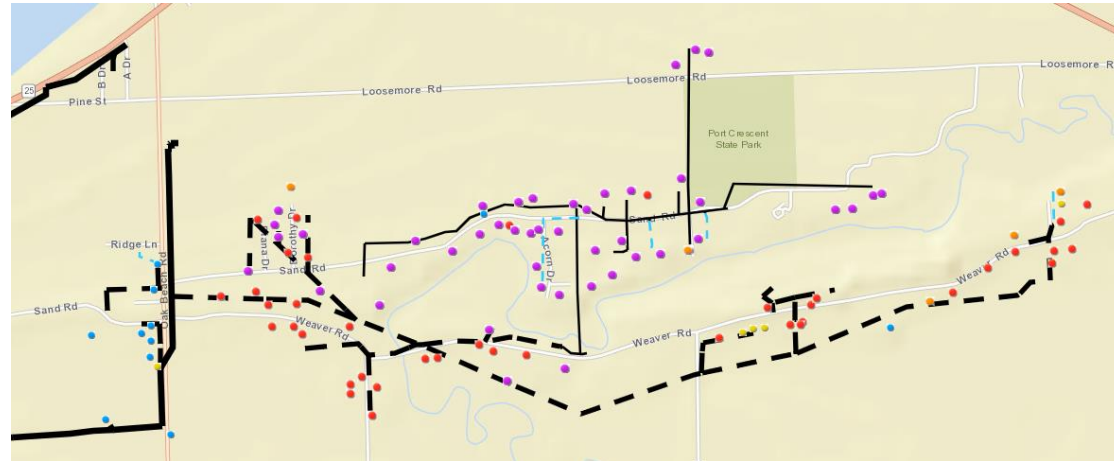
2018 Sustained Outages: 5

2019 Sustained Outages: 11

** Not every customer experienced all the outages listed on the circuit*

Cause of 2019 Outages:

- Most outages caused by tree interference during storm and down power lines due to tree interference/wind.



Reliability Work:

Tree Trimming	Last completed in 2012
Infrastructure Resilience	Aging equipment was identified and replaced on OAKBH0302 in Q3 2019
Preventative Maintenance	Maintenance work was completed at OAKBH substation in 2019

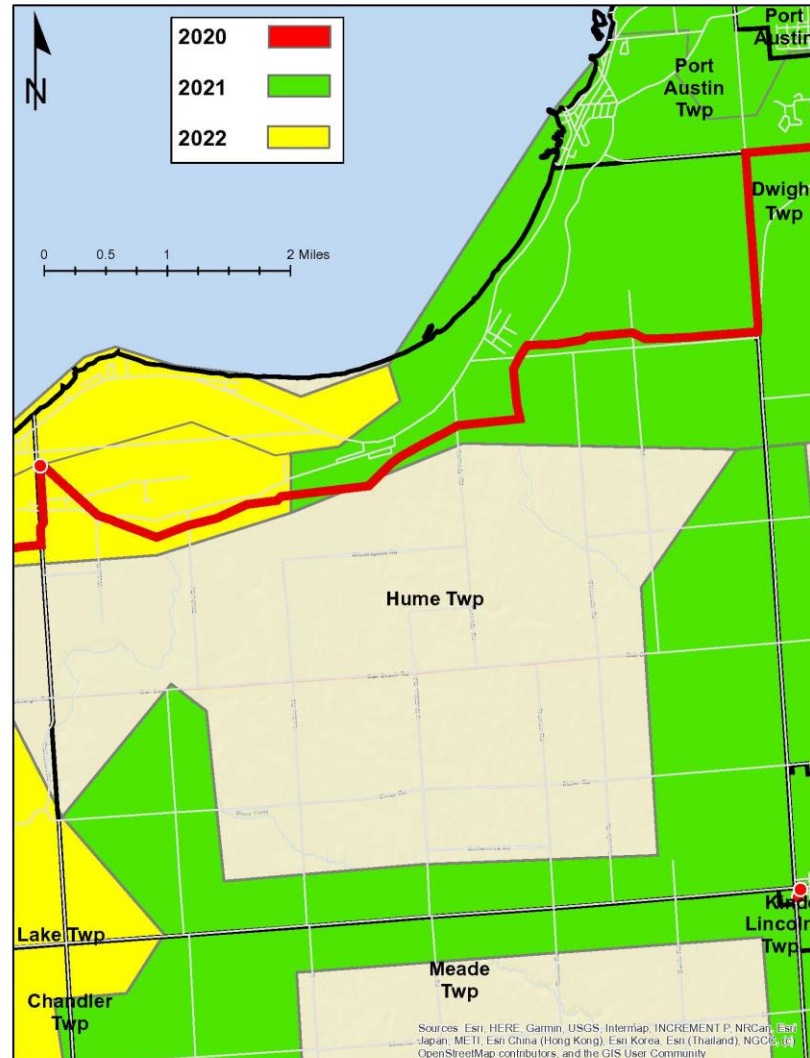
Map Legend:

- **Blue Dot-** Customer with 1-3 outages
- **Yellow Dot-** Customer with 4 outages
- **Orange Dot-** Customer with 5-6 outages
- **Red Dot-** Customer with 7-8 outages
- **Purple Dot-** Customer with 9 or greater outages

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5 Year Outlook: Proposed Hume Twp. Tree Trim Work



System Improvements Done in Hume Township

Circuit	System Work Completed
OAKBH0301	CEMI Rapid response program (spot line clearance, equipment replacements, install operating devices) Reconductor ~2,700' of overhead system
OAKBH0302	CEMI Rapid response program (spot line clearance, equipment replacements, install operating devices)
PTAUS0312	CEMI Rapid response program (spot line clearance, equipment replacements, install operating devices)

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DTE Resources

- Report an Outage
 - DTE mobile APP
 - Call 800-477-4747
 - Online at dteenergy.com
- Emergencies
 - 800-477-4747
- Customer service/Billing questions
 - 800/477-4747 or contact us via social media on Facebook
- Visit our blog: Empoweringmichigan.com
- Follow us on social media
 - Twitter: @dteenergy
 - Facebook: <https://www.facebook.com/dteenergy/>

